

## **ORTHODONTIC WIRE RETAINER**

### **Field of the Invention**

[0001] This invention relates to an orthodontic wire retainer. More particularly, the present invention relates to an orthodontic wire retainer kept in place following an orthodontic treatment of the dental arch, until fixation of the arch.

### **BACKGROUND OF THE INVENTION**

[0002] Following an orthodontic treatment of the dental arch, an orthodontic retainer is set in position for a fairly long time. If the dental arch is allowed to stand, it will return to pretreatment condition, resulting in a relapse. A retainer is mounted on the dental arch to prevent such a relapse. A conventional retainer made from such material as metal wire is the subject of U.S. Patent 4,725,230 and is shown in Figure 1. The orthodontic wire retainer has a first metal wire **11** laid along the posterior surface of a dental arch, a second metal wire **12**, laid along the anterior surface of the dental arch, and a third metal wire **13**, fitted between a bicuspid **20** and premolar **30**, or between the premolar **30** and a molar **40**. The first and second metal wires fuse to the third metal wire to constitute an annular bridge **13**, providing a resilient support for the dental arch **10**.

[0003] It is an object of the invention to provide an orthodontic wire retainer for application to a dental arch to prevent a return to the pretreatment condition.

[0004] It is another object of the invention to provide a retainer having a clasp and rest to prevent sinking of the wire retainer.

[0005] It is another object of the invention to provide a retainer that may be kept in place for an extended period of time.

[0006] It is another object of the invention to provide a wire retainer that is comfortable for the patient.

[0007] These and other objects of the invention will become apparent to one of ordinary skill in the art, after reading the

disclosure of the invention.

### **SUMMARY OF THE INVENTION**

[0008] An orthodontic wire retainer is applied to a dental arch following an orthodontic treatment. A first metal wire extends along the posterior surface of the dental arch, a second metal wire extends along the anterior surface, and a third wire fits between a bicuspid and premolar or between the premolar and a molar. The first, second and third wires are adjoined to provide an annular bridge supporting the dental arch. A wire clasp laid along the buccal surface of the premolar attaches to the first metal wire to sustain strength of the wire retainer by attaching a wire rest on the premolar or molar to prevent sinking of the wire retainer.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

- [0009] Figure 1 depicts a prior art wire retainer;
- [0010] Figure 2 depicts a perspective view of the retainer of the invention;
- [0011] Figure 3 is a side view of the retainer wire clasp; and
- [0012] Figure 4 is a top view of the retainer section having the wire clasp and wire rest.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

[0013] Figure 2 is a front perspective view of the wire retainer. The wire retainer has a first wire **11**, extending along the posterior surface of the dental arch **10**, a second wire **12**, extending in a loop along the anterior surface of the dental arch **10**, and a third wire **13**, fitting between a bicuspid tooth **20** and a premolar **30** and attached to the first and second wires **11**, **12**. Once joined, the first, second and third wires form an integral bridge **14**, providing resilient support for the arch. The support forms a dental arch bracing appliance, transmitting orthodontic pressure. The wire can be made from any appropriate metal, such

as stainless steel or gold.

[0014] Both terminal ends of the first wire **11**, second wire **12** and third wire **13**, are curved along the surfaces of the molar **40**, premolar **30** and bicuspid **20** on each side of the dental arch to prevent sinking of the wire, with respect to the dental arch. While the third wire is shown between canine **20** and premolar **30**, it may be positioned between the premolar **30** and molar **40**. To further prevent sinking of the wire retainer, a wire clasp **16** lays along the buccal surface of the premolar, as shown in Figure 3. As seen in this figure, the wire clasp has a general W-shape when seen from the side. The wire clasp **16** is attached to the first metal wire **11** to sustain strength of the wire retainer. The wire clasp **16** holds both the buccal surface and lingual surface of the premolar and prevents sinking of the first metal wire.

[0015] In addition to the wire clasp **16**, a wire rest **17** rests upon the premolar **40**. The wire rest attaches to the first metal wire **11** and prevents elongation of the premolar and sinking of the wire retainer. The wire rest is L-shaped and has a first section extending between the premolar **30** and molar **40** and a second section resting on the top surface of the premolar **30**. Of course, if the third wire **13** were positioned between the premolar **30** and molar **40**, as mentioned previously, the wire rest would rest upon the molar **40**.

[0016] While the invention has been described with reference to a preferred embodiment, variations and modifications would be apparent to one of ordinary skill in the art without departing from the scope of the invention. The invention is defined by the appended claims.